



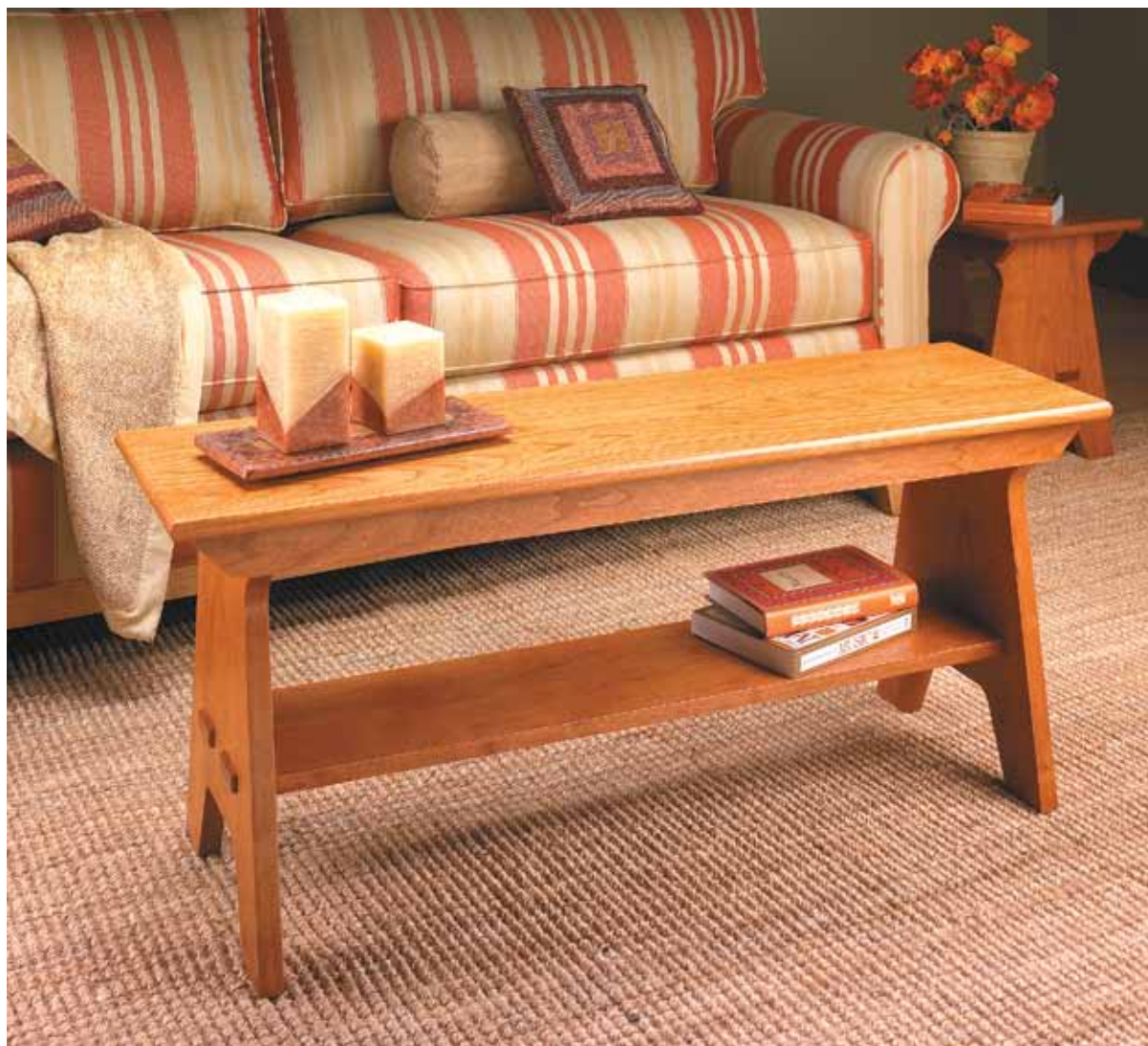
Woodsmith **PLANS**

NANTUCKET BENCH



NANTUCKET BENCH

Mortises on the table saw? Why not? This easy-to-build bench gives you the perfect opportunity to try it.



The bench in the photo above is a simple, country classic. I'm guessing it might look kind of familiar. That's because this basic style has been used for ages. Two ends, a seat, and a few connecting pieces — that's really about all there is to it.

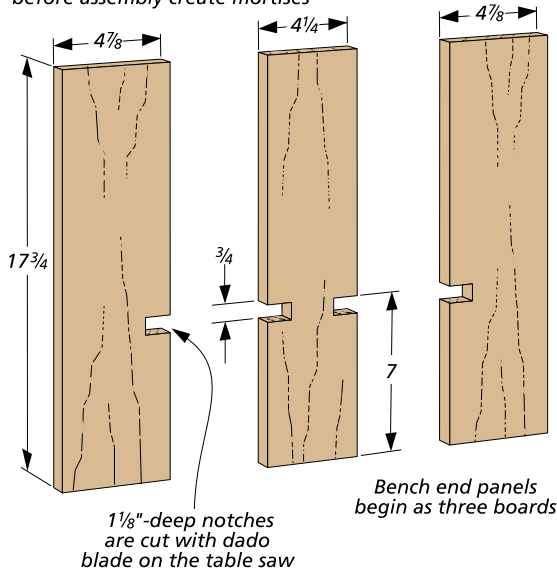
What first catches your eye are the gracefully shaped end panels

that form the legs and the through tenons of the stretcher. This joinery gives the bench the look of a piece that took some extra time and experience to build.

In the past, hand tools would have been used for this task. But there's an easier way to achieve the same results with a lot less work.

Believe it or not, you're going to use the table saw to cut the mortises. As you can see in the drawing on page 2, the mortises start out as notches cut into the edges of the three separate boards that make up the end panels. When the boards are assembled, the notches align to form the through mortises.

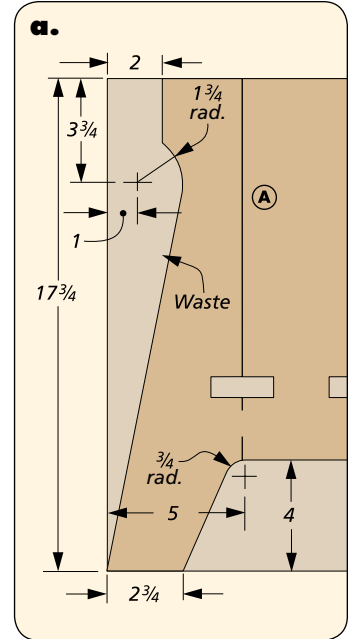
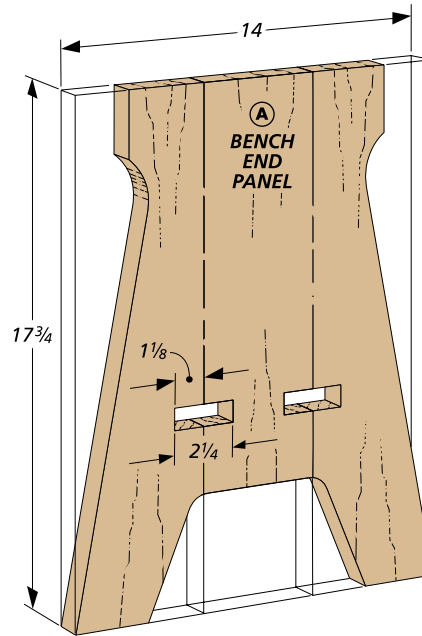
NOTE: Notches cut in end panels before assembly create mortises



1 1/8"-deep notches are cut with dado blade on the table saw

NOTE: Shape of bench end panels can be laid out using a compass and straightedge

Final shape of bench end panel is cut with jig saw or band saw



NOTE: Bench end panels are glued up from 1"-thick stock

Making the Ends

The first step is to cut the three boards that form each bench end blank to size from 1"-thick stock. Make certain the width of the center board is accurate. This will ensure that you end up with the correct spacing between the two mortises.

CUT THE NOTCHES. Once the boards are cut to size, you can begin work on cutting the notches that create the mortises. The box below gives you the inside track. But before you get started, take a little time to mark the bottom of each board. When I cut the notches, I made sure to hold

the bottom edge of each piece tightly against the rip fence. This way, the notches line up to form perfectly sized mortises.

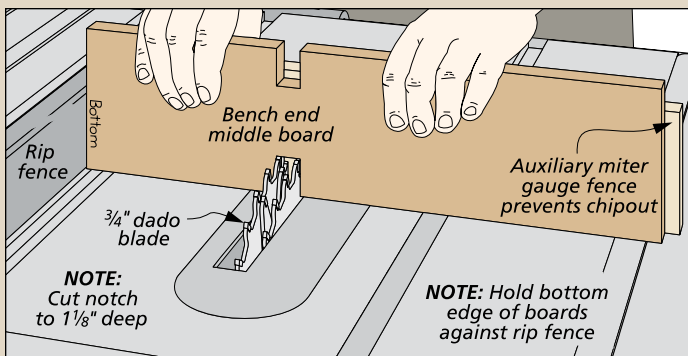
GLUE UP. Once the notches are cut, glue the boards together to form the end panel blanks. I used a simple trick to keep the notches aligned during assembly. Just take some scraps of hardwood and cut "keys" sized to fit the assembled mortises. When they're inserted during the glueup, they'll keep the notches aligned while the clamps are tightened down.

A little wax on the keys will keep them from sticking in the mortises.

CUT TO SHAPE. When the glue is dry, the end panels can be cut to shape. The shape of the completed bench ends is just a combination of radiused curves connected by straight lines. A compass and a straightedge are all you need for the layout. Detail 'a' provides all the dimensions.

After completing the layout of the end panels, cut them to shape with a band saw or jig saw. A little sanding will smooth the edges.

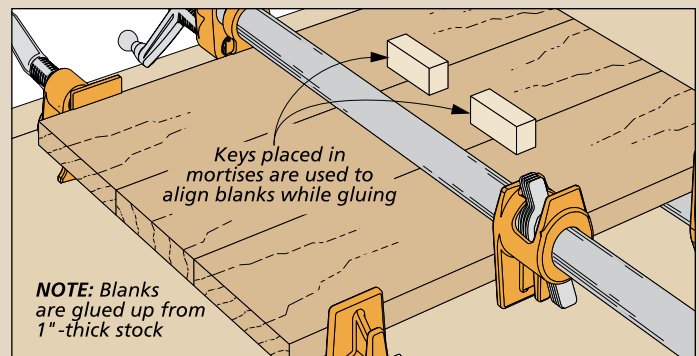
HOW-TO: MAKING MORTISES WITH THE TABLE SAW



NOTE: Cut notch to 1 1/8" deep

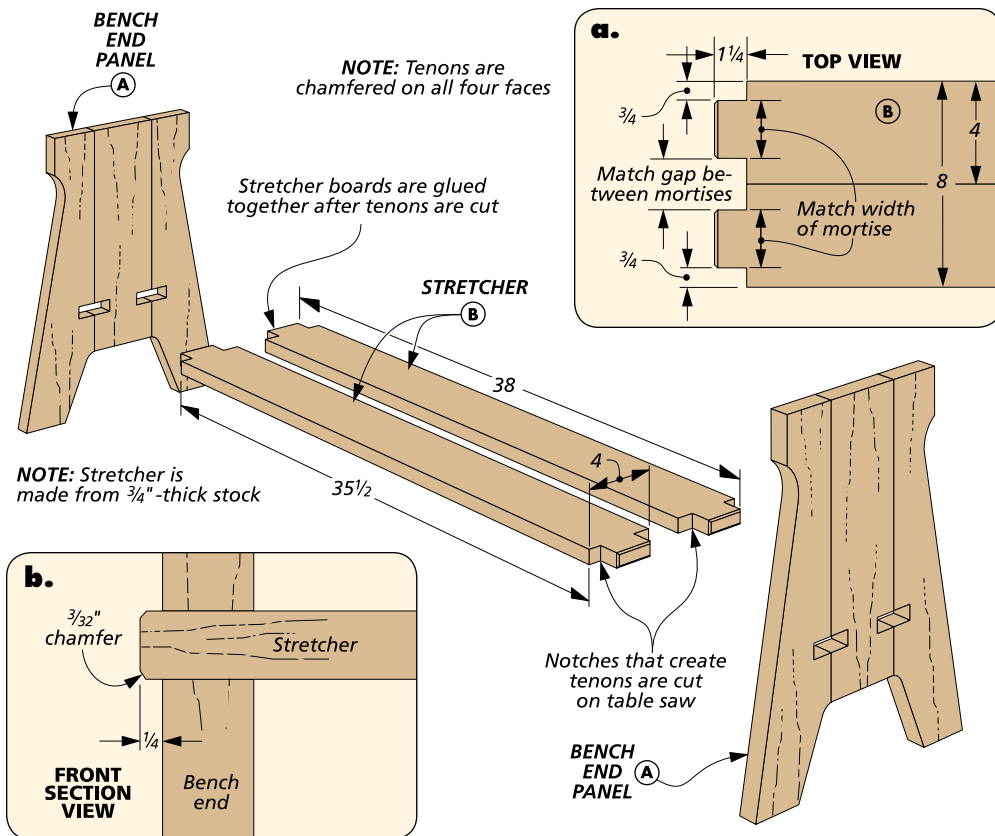
NOTE: Hold bottom edge of boards against rip fence

Cutting Notches. A 3/4" dado blade installed in the table saw makes cutting the notches for the mortises an easy job. With the rip fence as a stop, just sneak up on the height.



NOTE: Blanks are glued up from 1"-thick stock

Assembling the End Blanks. The trick to assembling the end blanks is keeping the notches aligned. Waxed keys inserted before the clamps are tightened will solve the problem.



boards will form tenons. The box below shows the process.

INSIDE NOTCHES. Start by cutting the notches that create the space between the two tenons. The goal here is to match the distance between the two tenons on the ends of the stretcher (detail 'a') to the distance between the mortises. So carefully sneak up on the height of the notches and measure the spacing as you go.

OUTSIDE NOTCHES. When you have the inside notches right, you can move on to the outside notches. These notches are not as deep. So first lower the blade, and then just repeat the same process. At this stage the tenons will be taking shape, so you can carefully test fit them to the mortises.

ONE STRETCHER. When the tenons are a snug fit in the mortises, the two halves of the stretcher can be glued together. The trick is to keep the two boards aligned end to end. To do this, I applied glue and loosely clamped the two boards together. Then I used a long clamp and a couple of small blocks placed between the two tenons at either end to force the ends flush while I tightened the clamps.

CHAMFER. The final detail on the stretcher is just for show — a small chamfer on the ends of the tenons. The long faces of the tenons can be chamfered at the router table. To chamfer the short faces, where a router bit can't reach, I picked up a sharp chisel (photo on page 4).

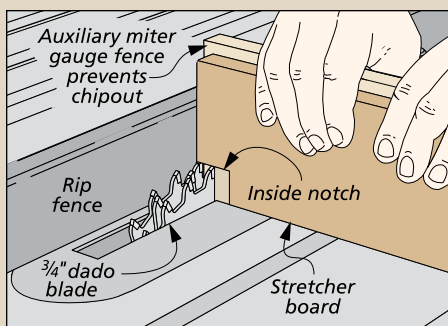
Building the Stretcher

Once the two ends are completed, you can begin work on the “double tenoned” stretcher that connects them. The drawing above shows the details. Like the bench ends, I made the joinery simple by working on two separate boards. Rather than trying to cut two tenons on a single workpiece, it's much easier to cut a single tenon on two separate pieces.

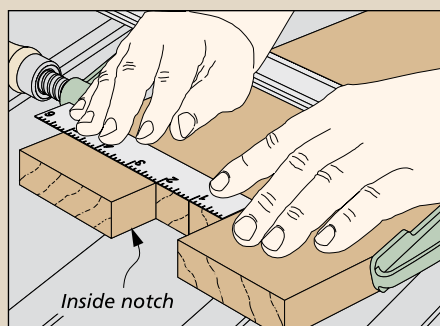
And when the boards are glued together, you'll have a tight fitting, “double tenon” stretcher.

TWO BOARDS. The first step is to cut the two boards for the stretcher to size from 3/4"-thick stock. Now you can put a wide dado blade back on the table saw to cut some more notches. But this time around, notches on the ends of the stretcher

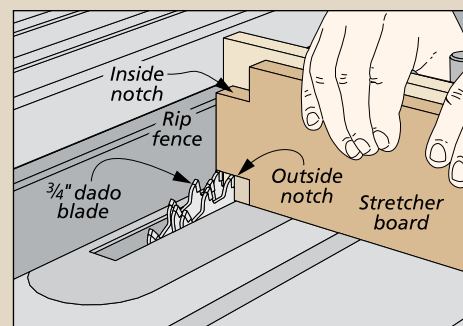
HOW-TO: CUTTING THE TENONS



Inside Notches. With a wide dado blade on the saw and the fence set as a stop, sneak up on the height of the notches.



Check the Gap. Check your progress by clamping the boards together and measuring the gap created by the notches.



Final Fit. When the gap created by the notches is right on, you can complete the tenons by cutting the outside notches.

Adding the Seat

With the stretcher completed, the hard part is done. And after you've made the support rails and the seat, you can put the pieces together.

MAKING THE SUPPORT RAILS. Your first task is to cut the two support rails to size. As you can see in the exploded view at right, the rails have a dado at each end that captures the flat edge at the top of the bench end panels. This helps keep the bench square.

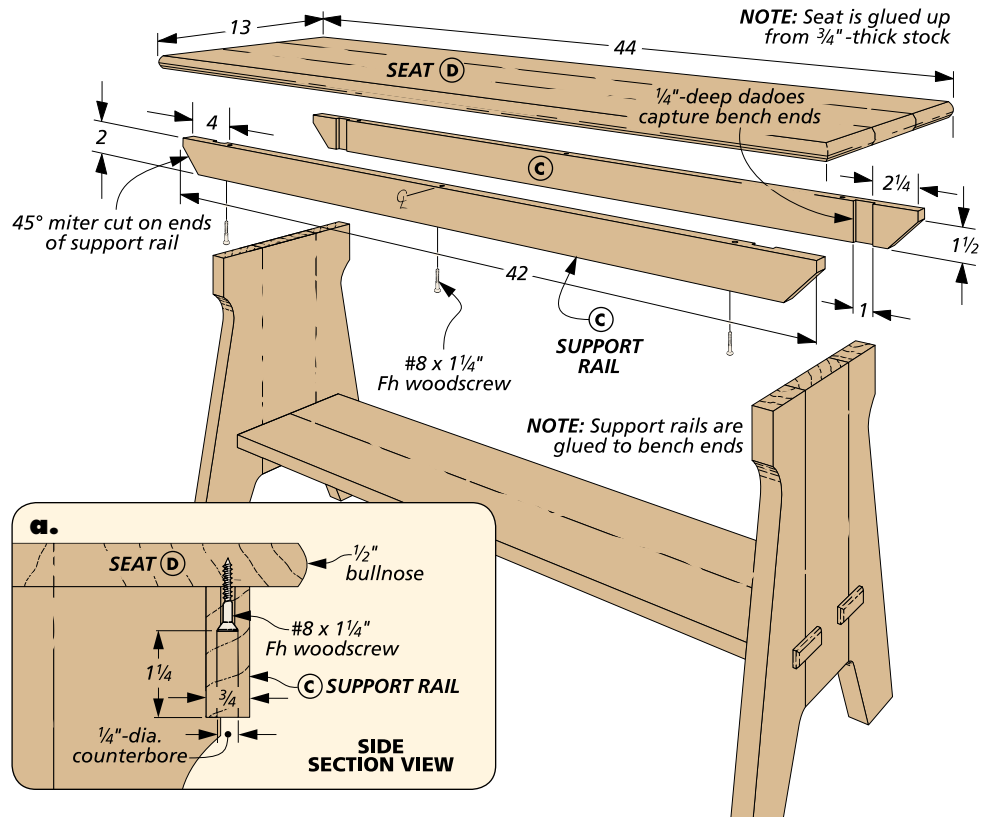
After cutting these wide dados in both support rails, I cut a miter on the ends of each piece, as you can also see in the drawing.

Finally, each rail has three deeply counterbored shank holes that will be used to attach the seat.

THE SEAT. No bench is complete without a seat. So the seat can be glued up from $\frac{3}{4}$ "-thick stock and then trimmed to size. A routed bullnose on the edges will make the seat a little more comfortable.

PUT IT TOGETHER. Now the assembly can begin, and there are a couple of points to remember. First, it's a good idea to assemble the two ends, the stretcher, and the support rails at one time. A "one step" glueup will make it much easier to square the bench, and it isn't difficult to do.

When you apply the glue to the stretcher tenons, go easy. The most important glue surface on the tenons and mortises is along the short



vertical faces, so this is where the glue needs to be.

CLAMPING. Once the stretcher was inserted between the two ends, I tightened a clamp end-to-end along both sides. A couple of clamps across the width of the bench will hold the support rails in place.

Finally, with the base assembled, you can lay it upside-down on the seat and fasten the two together with woodscrews (detail 'a').



◀ At times, a little hand work is the best answer. With a sharp chisel, you can carefully pare from both sides to complete the chamfers on the short faces of the tenons.

DESIGNER'S NOTEBOOK

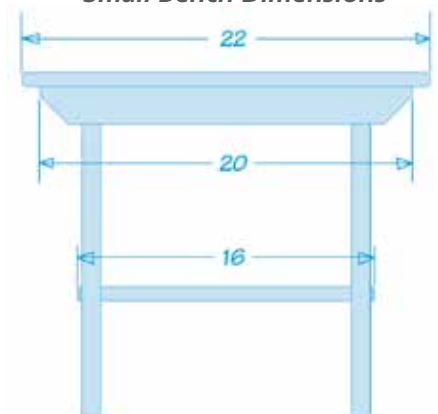


A Smaller Version

Sometimes the simplest of design changes can give a project a whole new look and function. By taking this design and changing the overall length, the long bench becomes a nicely proportioned "one seater" or even a small side table.

The changes couldn't be easier to make. All you need to do is shorten the length of the stretcher, the two support rails, and the seat by an equal amount. The dimensions of the two end panels don't change. And all of the joinery and techniques described above will be the same.

Small Bench Dimensions



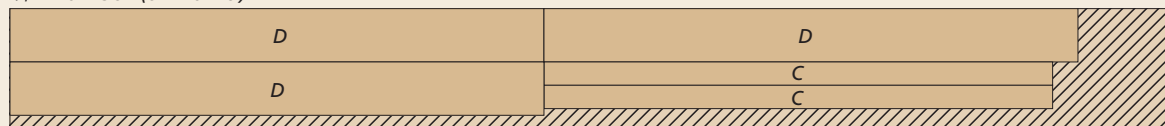
NANTUCKET BENCH (LONG)

MATERIALS & SUPPLIES

A Bench Ends (2)	1 x 14 - 17 ³ / ₄	D Seat (1)	³ / ₄ x 13 - 44
B Stretcher (1)	³ / ₄ x 8 - 48		
C Support Rails (2)	³ / ₄ x 2 - 42	• (6) #8 x 1 ¹ / ₄ " Fh Woodscrews	

CUTTING DIAGRAM

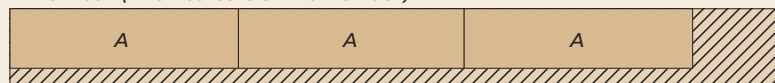
³/₄" x 10" - 96" (6.7 Bd. Ft.)



³/₄" x 5" - 96" (3.3 Bd. Ft.)



1" x 6" - 60" (Two Boards @ 3.1 Bd. Ft. Each)



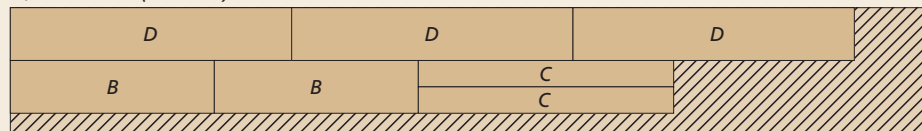
NANTUCKET BENCH (SHORT)

MATERIALS & SUPPLIES

A Bench Ends (2)	1 x 14 - 17 ³ / ₄	D Seat (1)	³ / ₄ x 13 - 22
B Stretcher (1)	³ / ₄ x 8 - 16		
C Support Rails (2)	³ / ₄ x 2 - 20	• (6) #8 x 1 ¹ / ₄ " Fh Woodscrews	

CUTTING DIAGRAM

³/₄" x 10" - 72" (5 Bd. Ft.)



1" x 6" - 60" (Two Boards @ 3.1 Bd. Ft. Each)

